HEALTH IMAGING

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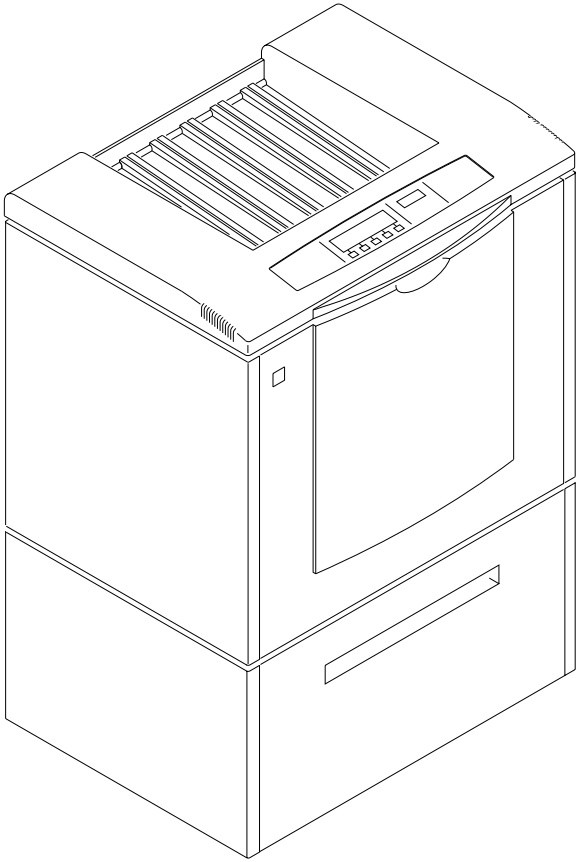
DIAGNOSTICS
for the
Kodak X-Omat 3000 RA PROCESSOR
Service Code: 3434



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This equipment includes parts and assemblies sensitive to damage from electrostatic discharge. Use caution to prevent damage during all service procedures.

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Section 1: Error Codes

Introduction

Overview

The software on the 5000 MICROPROCESSOR BOARD controls and monitors the operation of the PROCESSOR and continually checks for errors. When an error occurs, a description of the error is displayed on the DISPLAY PANEL.

When 2 or more errors occur together, all the errors are displayed, but only 1 error is visible on the DISPLAY PANEL at a time. The error with the highest priority is displayed first. You can scroll through the list to view the other errors.

An error log on the 5000 BOARD records the last 100 errors that have occurred and the number of times each error has occurred.
3 types of errors can occur:

- Fatal
- Non-Fatal
- Warning

Fatal and Non-Fatal Errors

Only qualified service personnel should repair both fatal and non-fatal errors

- Most fatal errors prevent optimum film processing.
- Most non-fatal errors do not prevent optimum film processing.

IMPORTANT:

When you service a PROCESSOR with a fatal or non-fatal error and you check an electrical component or BOARD, also check all the:

- connections for the component or BOARD
- voltages from the POWER SUPPLY for the component or BOARD

Warning Errors

Operators can repair warning errors. Normally, you can feed film into a PROCESSOR when a warning error is displayed.

READY LED

If any error prevents optimum film processing, the READY LED will de-energize. When the LED de-energizes, you can feed film into the PROCESSOR but the image quality may not be correct. Kodak recommends that you do not process film when the LED is de-energized.

All Errors

Important

When you check an electrical component or BOARD, also check all the:

- connections and CABLES for the component or BOARD
- voltages from the POWER SUPPLY for the component or BOARD

Note

PROCESSORS with Serial No. 100500 and above have a 5000 BOARD with replaceable RELAYS K5001 through K5006. RELAY K5006 is a spare RELAY that can be removed and used to replace RELAYS K5001 - K5005.

Fatal Errors

Code	Description	Possible Malfunction	Action
E001	Microcontroller error	5000 BOARD	Install a new BOARD.

Code	Description	Possible Malfunction	Action
E002	Dryer over maximum temperature The maximum temperature is 79 C (175 F). Normally, the DRYER DC OVER-TEMPERATURE THERMOSTAT opens before the DRYER reaches this temperature.	DRYER THERMISTOR	Check that the resistance at 25 C (77 F) is approximately 10 KW.
		SOLID STATE RELAY U3 that controls the DRYER HEATER	Check U3.
		5000 BOARD	Install a new BOARD.
E003	Loss of film accumulator data link	No communication with the 6000 BOARD	De-energize and energize the PROCESSOR to automatically reset it.
		BOOT PROM U6018 on the 6000 BOARD	Install a new U6018.
		6000 BOARD	Install a new BOARD.
		5000 BOARD	Install a new BOARD.
E004	Inoperative transport	See E041.	
E005	Dryer over-temperature thermostat open	When this error occurs, the DRYER HEATER and BLOWER are disabled.	
		DRYER DC OVER-TEMPERATURE THERMOSTAT	Reset or install a new THERMOSTAT. If the THERMOSTAT opens again, determine the cause of the over-temperature condition. See E002.
E007	Developer thermistor failure	The DEVELOPER HEATER is disabled when this error occurs.	
		DEVELOPER THERMISTOR	Install a new THERMISTOR.
E008	Fixer thermistor failure	The FIXER HEATER is disabled when this error occurs.	
		FIXER THERMISTOR	Install a new THERMISTOR.
E009	Dryer thermistor failure	The DRYER HEATER is disabled when this error occurs.	
		DRYER THERMISTOR	Install a new THERMISTOR.
E010	Analog-to-digital converter failure	All 3 HEATERS are disabled when this error occurs.	
		5000 BOARD	Install a new BOARD.

Code	Description	Possible Malfunction	Action
E011	Developer Heater failure	This error occurs when the 8000 CURRENT SENSE BOARD detects no current through the DEVELOPER HEATER.	
		When the temperature of the developer solution is too high, the DEVELOPER HEATER OVERTEMPERATURE THERMOSTAT will open. The THERMOSTAT will reset automatically when the solution cools.	Determine the cause for the high developer temperature, and repair the problem.
		No continuity for the DEVELOPER HEATER The resistance should be approximately 70 W.	Install a new HEATER.
		SOLID STATE RELAY U1 that controls the DEVELOPER HEATER	Install a new U1.
		The 5000 BOARD does not energize the SOLID STATE RELAY U1.	Check that LED DS4 on the 5000 BOARD is energized.If necessary, install a new BOARD.
		No AC power to the DEVELOPER HEATER when both DS4 and DS9 are energized.	If the 5000 BOARD has removable RELAYS, install a new RELAY K5004. Otherwise, install a new 5000 BOARD.
		8000 BOARD	Install a new BOARD.
E012		This error occurs when the 8000 CURRENT SENSE BOARD detects no current through the FIXER HEATER.	
		When the temperature of the fixer solution is too high, the FIXER HEATER OVERTEMPERATURE THERMOSTAT will open. The THERMOSTAT will reset automatically when the solution cools.	Determine the cause for the high fixer temperature and repair the problem.
		No continuity for the FIXER HEATER The resistance should be approximately 70 W.	Install a new HEATER.
		SOLID STATE RELAY U5 that controls the FIXER HEATER	Install a new U5.
		The 5000 BOARD does not energize the SOLID STATE RELAY U5.	Check that the LED DS1 on the 5000 BOARD is energized. If necessary, install a new BOARD.
		No AC power to the FIXER HEATER when both DS4 and DS9 are energized.	If the 5000 BOARD has removable RELAYS, install a new RELAY K5004. Otherwise, install a new 5000 BOARD.
		8000 BOARD	Install a new BOARD.
E013	Level Sensor circuit failure	This error occurs when the circuit on the 5000 BOARD for the LEVEL PROBE malfunctions. The following parts are disabled: • DEVELOPER and FIXER REPLENISHMENT PUMPS • RECIRCULATION PUMP	
		5000 BOARD	Install a new BOARD.

Code	Description	Possible Malfunction	Action
E014	Invalid program software	E014 is displayed on the DEVELOPER TEMPERATURE DISPLAY. This error disables all subsystems, except communications.	
		The main program software in the EEPROM on the 5000 BOARD	Download new software.
E015	Invalid bootstrap software	The bootstrap software for the PROM U5006 on the 5000 BOARD	Install a new U5006.
E016	Invalid film accumulator software	This error does not disable any subsystems. The PROCESSOR will remain in the standby mode until the FILM DETECTOR SWITCHES actuate. These SWITCHES provide information about the length of the film. Because the 6000 BOARD does not operate correctly, the PROCESSOR uses the information from the SWITCHES to determine the replenishment rate.	
		The main program software in the EEPROM on the 6000 BOARD	Download new software.

Non-Fatal Errors

Code	Description	Possible Malfunction	Action
E032	Developer tank fill error	This error will occur if the: • DEVELOPER TANK: – does not fill in 4 minutes in normal operation. – does not fill in 15 minutes in the Tank Fill Mode. – is empty and the operator does not select the Tank Fill Mode. • REPLENISHMENT TANK is empty. • REPLENISHMENT HOSE has an obstruction. • TANKS of the PROCESSOR are filled with water during the initial installation. The following parts will be disabled: • DEVELOPER REPLENISHMENT PUMP • RECIRCULATION PUMP • Temperature control for the fixer and developer To prevent the error from occurring during the initial installation: • add 240 mL (8 fl oz) of developer to the DEVELOPER TANK before you fill the PROCESSOR with water. • energize the RECIRCULATION PUMP to move the developer and remove any air bubbles. Use the diagnostics to energize the PUMP.	
		LEVEL PROBES	Clean and check the PROBES.
		The solution level in the REPLENISHER TANK is low.	Mix new developer solution.
		Solution does not flow through the HOSES between the REPLENISHMENT TANK and the REPLENISHMENT PUMP.	Check • HOSE CLAMPS are tight • HOSES: – are round and opened – have no obstructions or air bubbles
		The DEVELOPER DRAIN VALVE is open.	Close the VALVE.
		SOLID STATE RELAY U2 that controls the DEVELOPER REPLENISHMENT PUMP	Check U2.
		POPPET VALVES in the DEVELOPER REPLENISHMENT PUMP	Clean and check the VALVES.
		DEVELOPER REPLENISHMENT PUMP	Check FUSE F1 and the REPLENISHMENT PUMP MOTOR B3.
		The 5000 BOARD does not energize the SOLID STATE RELAY U2.	Check that the LED DS3 on the 5000 BOARD is illuminated. If necessary, install a new BOARD.

Code	Description	Possible Malfunction	Action
E033	Fixer tank fill error	This error will occur if the: • FIXER TANK: – does not fill in 4 minutes in normal operation. – does not fill in 15 minutes in the Tank Fill Mode. – is empty and the operator does not select the Tank Fill Mode. • REPLENISHMENT TANK is empty. • REPLENISHMENT HOSE has an obstruction. • TANKS of the PROCESSOR are filled with water during the initial installation. The following parts will be disabled: • FIXER REPLENISHMENT PUMP • RECIRCULATION PUMP • Temperature control for the fixer and developer To prevent the error from occurring during the initial installation: • add 240 mL (8 fl oz) of fixer to the FIXER TANK before you fill the PROCESSOR with water. • energize the RECIRCULATION PUMP to move the fixer and remove any air bubbles. Use the diagnostics to energize the PUMP.	
		LEVEL PROBES	Clean and check the PROBES.
		The solution level in the REPLENISHER TANK is low.	Mix new fixer solution.
		Solution does not flow through the HOSES between the REPLENISHMENT TANK and the REPLENISHMENT PUMP.	Check • HOSE CLAMPS are tight • HOSES: – are round and opened – have no obstructions or air bubbles
		The FIXER DRAIN VALVE is open.	Close the VALVE.
		SOLID STATE RELAY U2 that controls the FIXER REPLENISHMENT PUMP	Check U2.
		POPPET VALVES in the FIXER REPLENISHMENT PUMP	Clean and check the VALVES.
		FIXER REPLENISHMENT PUMP	Check FUSE F1 and the REPLENISHMENT PUMP MOTOR B4.
		The 5000 BOARD does not energize the SOLID STATE RELAY U4.	Check that the LED DS2 on the 5000 BOARD is illuminated. If necessary, install a new BOARD.

Code	Description	Possible Malfunction	Action
E038	Loss of developer cooling ability	Water does not enter the WASH TANK.	Check • that water is supplied to the PROCESSOR – The water supply is turned on. – The FILTER is clean. • WASH WATER SOLENOID L1 – The operation is correct. – The SCREEN has no obstructions. • DEVELOPER COOLING SOLENOID L2 • QUICK DISCONNECT
		The temperature of the water entering the WASH TANK is too hot.	Decrease the temperature of the water supply. The wash water must be a minimum of 5.5 C (10 F) below the setpoint of the developer.
		HEAT EXCHANGER in the WASH TANK	Remove any obstructions from the EXCHANGER.
		The 5000 BOARD does not energize SOLENOIDS L1 or L2	Check that the correct LED on the 5000 BOARD is energized: • DS16 for L1 • DS15 for L2 Check for 24 V DC at TERMINALS 1 and 2 on the: • WASH WATER SOLENOID L1 • DEVELOPER COOLING SOLENOID L2 If necessary, install a new BOARD.
		There is AC power at the RECIRCULATION PUMP, but the PUMP does not operate.	Check the RECIRCULATION PUMP MOTOR B5. If necessary, install a new PUMP.
		No AC power to the RECIRCULATION PUMP.	If the 5000 BOARD has removable RELAYS, install a new RELAY K5003. Otherwise, install a new 5000 BOARD.
		The WASH TANK CLIP is not fully seated or is not installed.	Check that the CLIP is fully seated. If necessary, install the CLIP.

Code	Description	Possible Malfunction	Action
E040	Loss of dryer heating ability	A PANEL or DRYER RACK is not installed.	Install the part.
		SOLID STATE RELAY U3 that controls the DRYER HEATER	Check U3.
		RELAY K1 that enables the DRYER HEATER	Check K1.
		No continuity for the DRYER HEATER	Check that the resistance at 25 C (77 F) is approximately 16 W
		DRYER OVER-TEMPERATURE THERMOSTAT	Reset the THERMOSTAT. If the THERMOSTAT opens again, determine the cause of the high temperature. If you cannot determine the cause of the problem, install a new THERMOSTAT.
		No continuity for the DRYER HEATER THERMAL CUTOFF	Check that the DRYER BLOWER operates correctly. Install a new CUTOFF.
		5000 BOARD: • The 5000 BOARD does not energize the SOLID STATE RELAY U3. • The RELAY K5001 malfunctions.	If the LEDs DS5 and DS6 on the 5000 BOARD are energized: If the 5000 BOARD has removable RELAYS, install a new RELAY K5001. Otherwise, install a new BOARD.

<table>
<tr><th>Code</th><th>Description</th><th>Possible Malfunction</th><th>Action</th></tr>
<tr><td rowspan="5">E041</td><td rowspan="5">Loss of transport speed control
Note
This error occurs when the transport speed is adjusted for 10 seconds and the speed is not within 7.6 cm/min (3 in./min) of the setpoint</td><td colspan="2">When the PROCESSOR operates normally:
• The supply voltage from the QUAD POWER SUPPLY to the + and - TERMINALS of the DRIVE MOTOR CONTROLLER is 24 V DC.
• NOTE: Voltage can vary significantly from one PROCESSOR to another. The control voltage at Test Point MOTDRV on the 5000 BOARD is approximately:
– 1.0 V DC for the Extended Speed
– 1.9 V DC for the Standard Speed
– 2.6 V DC for the Rapid Speed
– 3.4 V DC for the K/RA Speed
• Feedback pulses from the DRIVE MOTOR CONTROLLER at Test Point MOTFB on the 5000 BOARD indicate the speed of the DRIVE MOTOR.
If the transport operates slower than the set speed, the MICROPROCESSOR increases the control voltage approximately 25 mV every second at Test Point MOTDRV on the 5000 BOARD. When the voltage reaches 5 V DC, the MICROPROCESSOR stops increasing the voltage.</td></tr>
<tr><td>5000 BOARD</td><td>If the control voltage is not correct at Test Point MOTDRV on the 5000 BOARD, install a new BOARD.</td></tr>
<tr><td>DC DRIVE MOTOR B6 or DRIVE MOTOR CONTROLLER</td><td>If B6 operates, but no pulses occur at Test Point MOTFB on the 5000 BOARD.</td></tr>
<tr><td>7000 BOARD</td><td>Close the COVERS and check that the 7000 BOARD supplies the MOTOR CONTROLLER with 24 V DC (CONNECTOR P/J7003, PINS 1 and 10), and 5 V DC (CONNECTOR P/J7003, PINS 4 and 10).</td></tr>
<tr><td rowspan="3">E042</td><td rowspan="3">Loss of accessory data link</td><td>Loose connections</td><td>Check all connections between any accessory and the PROCESSOR.</td></tr>
<tr><td>5000 BOARD</td><td>Install a new BOARD.</td></tr>
<tr><td>2000 BOARD</td><td>Install a new BOARD.</td></tr>
<tr><td>E045</td><td>Display data link error</td><td>CABLES between the 3000 and 5000 BOARD</td><td>Check the CABLES.</td></tr>
</table>

Warnings

Code	Description	Possible Malfunction	Action
E128	Top Cover not in place	When this error occurs: • the following function is disabled: – film transport • the following parts are disabled: – DRYER HEATER – BLOWER	
		TOP COVER is open.	Close the TOP COVER.
		INTERLOCK SWITCH S4	Check S4. If necessary, install a new S4.
		7000 BOARD	Install a new BOARD.
E129	Tanks currently being filled	When this error occurs: • the following function is disabled: – film transport • the following parts are disabled: – RECIRCULATION PUMP – 3 HEATERS – DRYER BLOWER	
		None	None. This message will clear automatically.
E130	Replenish pumps disabled	None	Use the KEYPAD to select either Automatic or Flooded Replenishment to enable the PUMPS.
E132	Developer under set temperature	None	None. This message will clear automatically when the developer reaches the setpoint temperature.
E133	Developer over set temperature	None	None. This message will clear automatically when the developer reaches the setpoint temperature.
E134	Dryer under set temperature	None	None. This message will clear automatically when the DRYER reaches the setpoint temperature.
E137	Film accumulator LED error	6000 BOARD	• Check that no chemical deposits are on the PROTECTIVE COVER for the BOARD. • De-energize and energize the PROCESSOR to reset it. • Check the BOARD. Use the internal diagnostics. • If necessary, install a new BOARD.
E141	Low developer tank level	When this error ocurs: • the RECIRCULATION PUMP is disabled. • the temperature control for the fixer and developer is disabled	
		None	This error will clear automatically when the developer solution reaches the correct level.

Code	Description	Possible Malfunction	Action
E142	Low fixer tank level	When this error ocurs: • the RECIRCULATION PUMP is disabled. • the temperature control for the fixer and developer is disabled	
		None	This error clears automatically when the fixer solution reaches the correct level.

Section 2: Mechanical Diagnostics

Transport Malfunction

Possible Cause	Check
RACK and CROSSOVER ASSEMBLIES	RACK and CROSSOVER ASSEMBLIES:correct positionsseated correctly • squareness – See the Adjustments and Replacements, Publication No. 5B6331, RACKS and CROSSOVERS. Adjusting the Squareness of the CROSSOVERS Adjusting the Squareness of the RACKS • cleaned completely – See the Preventive Maintenance, Publication No. 5B6746. CROSSOVER TROUGHS • correct positions WASH RESERVOIR • installed correctly
ROLLER ASSEMBLIES	ROLLERS • correct positions • rotate freely • GUDGEONS – no damage – If necessary, install new ROLLERS. GEARS, SPROCKETS, and IDLERS • engage correctly • not broken or worn BEARINGS • no wear SPRINGS and E-RINGS • not broken or missing RACK ASSEMBLY • DRIVE CHAIN – tension
DRYER	AIR TUBE BAFFLES • installed Temperature setting of the DRYER lowest possible setting to provide the best image quality • DRYER RACK and TOP EXIT RACK • seated correctly LOCKING TABS • correct positions DRIVE GEAR on the DRYER RACK • no damage
TOP COVER	TOP COVER • closed

Artifacts and Wrong Film Densities

Possible Cause	Check
Replenishment system	Replenishment rates • correct setting HOSES • opened and round • no obstructions or air bubblesHOSE CLAMPS • tight REPLENISHMENT PUMP • operation • calibration Replenishment chemicals • Change any chemicals that are: – not mixed correctly – exhausted – contaminated **Note** When you mix chemicals: • Mix a maximum of a 2-week supply of the DEVELOPER RELENISHER. • Follow all directions for mixing chemicals and solutions. • Use a SPLASH GUARD and DRIP TRAY when you remove the FIXER RACK from the PROCESSOR to prevent contamination of the developer. DEVELOPER and FIXER TANKS • DRAIN VALVES – completely closed
Recirculation system	DEVELOPER and RECIRCULATION HOSES • ORIFICES – no obstructions DEVELOPER FILTER • If necessary, install a new FILTER. Movement of the solutions at the surface of the PROCESSOR TANKS when you energize the PROCESSOR and the TANKS are full. • If the solutions do not move, check that the: – HOSES have no obstructions or air bubbles in the recirculation system – RECIRCULATION PUMP operates – DEVELOPER FILTER is clean and in the correct position

Possible Cause	Check
RACK and CROSSOVER ASSEMBLIES	RACKS and CROSSOVERS • correct positions • seated correctly • cleaned completely – See the Preventive Maintenance, Publication No. 5B6746. CROSSOVER TROUGHS and EVAPORATION COVERS • correct positions • TROUGHS – clean • TROUGH DRAINS – no obstructions WASH RESERVOIR • installed correctly
ROLLERS	ROLLERS • clean and not scratched • correct positions • rotate freely • GUDGEONS – no damage – If necessary, install new ROLLERS. DETECTOR ROLLERS • clean GEARS, SPROCKETS, and IDLERS • engage correctly • no wear BEARINGS • no wear SPRINGS and E-RINGS • not broken or missing DEVELOPER and FIXER RACK ASSEMBLIES • DRIVE CHAINS – correct adjustment of the tension
Drying system	DRYER AIR TUBES • clean – If necessary, use a BOTTLE BRUSH and water to clean the TUBES and SLOTS in the TUBES. • BAFFLES – installed Temperature setting of the DRYER • lowest possible setting to provide the best image quality • exhaust for the PROCESSOR – meets the specifications – See the Site Specifications, Publication No. 5B6329.
Wrong water temperature	Temperature of the water • 4 - 29 C (40 - 84 F)

Possible Cause	Check
Wash water	Water flows through the WASH RACK Holes in the WASH RESERVOIR • clean
COVERS and PANELS	TOP COVER • closed ACCESS PANEL • installed WET SECTION COVER • correct position
Ventilation system	Exhaust for the PROCESSOR • meets specifications • See the Site Specifications, Publication No. 5B6329. External EXHAUST HOSE • connected to the AIR EXHAUST Internal EXHAUST HOSE • connected to the AIR EXHAUST

Wet Films

Possible Cause	Check
Film and chemicals are not compatible.	Film • compatible with the selected cycle
Replenishment system	Replenishment rates • correct setting HOSES • opened and round • no obstructions or air bubbles HOSE CLAMPS • tight REPLENISHMENT PUMP • operation • calibration Replenishment chemicals • Change any chemicals that are: – not mixed correctly – exhausted – contaminated **Note** When you mix chemicals: • Mix a maximum of a 2-week supply of the DEVELOPER RELENISHER. • Follow all directions for mixing chemicals and solutions. • Use a SPLASH GUARD and DRIP TRAY when you remove the FIXER RACK from the PROCESSOR to prevent contamination of the developer. REPLENISHMENT TANKS • quantity of solution DEVELOPER and FIXER TANKS • DRAIN VALVES – completely closed
Recirculation system	Movement of the solutions at the surface of the PROCESSOR TANKS when you energize the PROCESSOR and the TANKS are full. • If the solutions do not move, check that the: – HOSES have no obstructions or air bubbles in the recirculation system – RECIRCULATION PUMP operates – DEVELOPER FILTER is clean and in the correct position

Possible Cause	Check
Drying system	DRYER AIR TUBES • clean – If necessary, use a BOTTLE BRUSH and water to clean the TUBES and SLOTS in the TUBES. • BAFFLES – installed DRYER • lowest possible temperature to provide the best image quality DRYER AIR EXHAUST • no obstructions • installed correctly – See the Installation Instructions, Publication No. 5B9330. DRYER HEATER • operates correctly DRYER RACK and TOP EXIT RACK • seated correctly
Wash water	Water flows through the WASH RACK Holes in the CROSSOVER TROUGHS • opened – If necessary, clean the holes to prevent an overflow of the water from the TROUGHS into the DEVELOPER and FIXER TANKS.

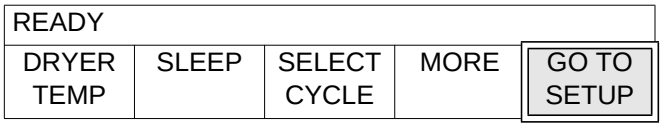
Solution Levels

Possible Cause	Check
Replenishment system	Replenishment rates: • correct setting HOSES • opened and round • no obstructions or air bubbles REPLENISHMENT PUMP • operation • calibration REPLENISHMENT TANKS • quantity of solution POPPET VALVES • clean • no damage DEVELOPER and FIXER TANKS • DRAIN VALVES – no leakage CROSSOVER TROUGHS • correct positions • TROUGHS – clean • TROUGH DRAINS – no obstructions

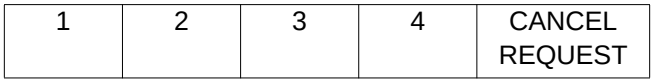
Section 3: Internal Diagnostics

Accessing the Internal Diagnostics

Procedure

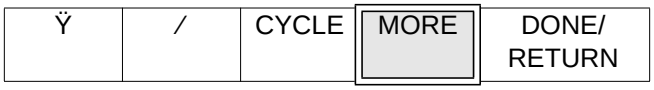


[1] Press “GO TO SETUP” from the main menu.

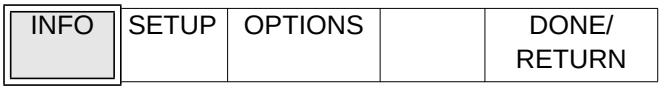


[2] Enter the access code. If the customer:

- has not changed the code, it is 4213.
- has changed the code, see the Adjustments and Replacements, Publication No. 5B6331, Electrical, Resetting or Bypassing the Access Code.



[3] Press “MORE”.



[4] Press “INFO”.

USAGE	DIAG	SW VERSION	MORE	DONE/ RETURN

[5] Press “DIAG” to display the first diagnostic menu. Advance to the next page to see the 3 diagnostic menus.

In addition to accessing the first diagnostic menu from this screen, you can access additional screens that will enable you to access more information about the PROCESSOR. Select:

- “USAGE” to access information about the type and quantity of film and chemicals used in the PROCESSOR
- “SW VERSION” to access the software version number for the following programs for the 5000 and 6000 BOARDS:
  - Boot program
  - Main program
- “MORE” to access the total number of hours the:
  - PROCESSOR has been energized
  - DRIVE MOTOR has been energized
- “DONE/RETURN” repeatedly to return to the main menu

D1 Menu

VIEW ERRORS	FILM DETECT	SENSOR TESTS	MORE	DONE/ RETURN

[1] Press “MORE” to display the D2 Menu.

D2 Menu

HEATER TESTS	SOLENOID TESTS	MOTOR TESTS	MORE	DONE/ RETURN

[1] Press “MORE” to display the D3 Menu.

D3 Menu

PUMP TESTS	RECEPT OUTLET	FILM ACCUMUL	MORE	DONE/ RETURN

[1] Press “MORE” to return to the first diagnostic menu.

Diagnostic Menus

Overview

When you enter the diagnostic menu, the software:

- de-energizes the following electrical components:
  - all HEATERS
  - all PUMPS
  - all SOLENOIDS
  - the BLOWER and DRIVE MOTORS
- de-energizes the SAFELIGHT OUTLET
- disables the error code detection

You can use the internal diagnostics to energize and de-energize electrical components. When you energize a component, it will automatically de-energize in 4 minutes.

Details

To view the specific options that are available from the D1, D2, and D3 Menus, see the Flowcharts for the Internal Diagnostics on the following pages.

Menus

D1 Menu

VIEW ERRORS	FILM DETECT	SENSOR TESTS	MORE	DONE/ RETURN

From the first menu, you can:

- access the History and Frequency Error Logs
- monitor the FILM DETECTOR SWITCHES
- monitor the SENSORS
- access the D2 Menu
- return to the main menu

D2 Menu

HEATER TESTS	SOLENOID TESTS	MOTOR TESTS	MORE	DONE/ RETURN

From this menu, you can:

- energize and de-energize the:
  - HEATERS
  - SOLENOIDS
  - MOTORS
- access the D3 Menu
- return to the main menu

Note

When you energize the HEATERS, energize the RECIRCULATION PUMPS, too, to prevent the OVER-TEMPERATURE THERMOSTAT from opening.

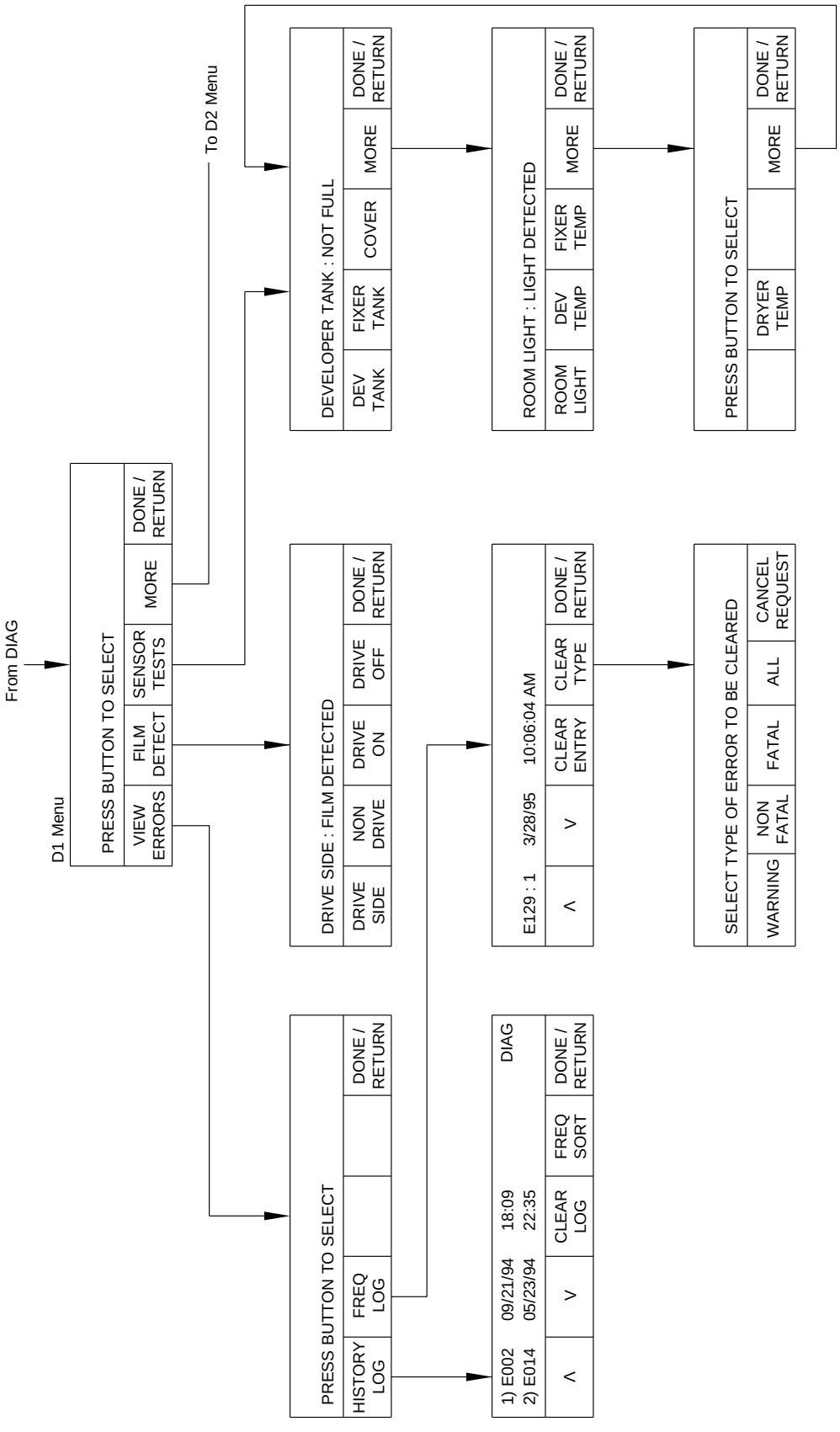
D3 Menu

PUMP TESTS	RECEPT OUTLET	FILM ACCUMUL	MORE	DONE/ RETURN

From this menu, you can:

- energize and de-energize the:
  - PUMPS
  - RECEPTACLE OUTLET
- calibrate the LEDs on the 6000 BOARD
- check the operation of the SENSORS on the 6000 BOARD
- access the D1 Menu
- return to the main menu

Flowcharts for the Internal Diagnostics



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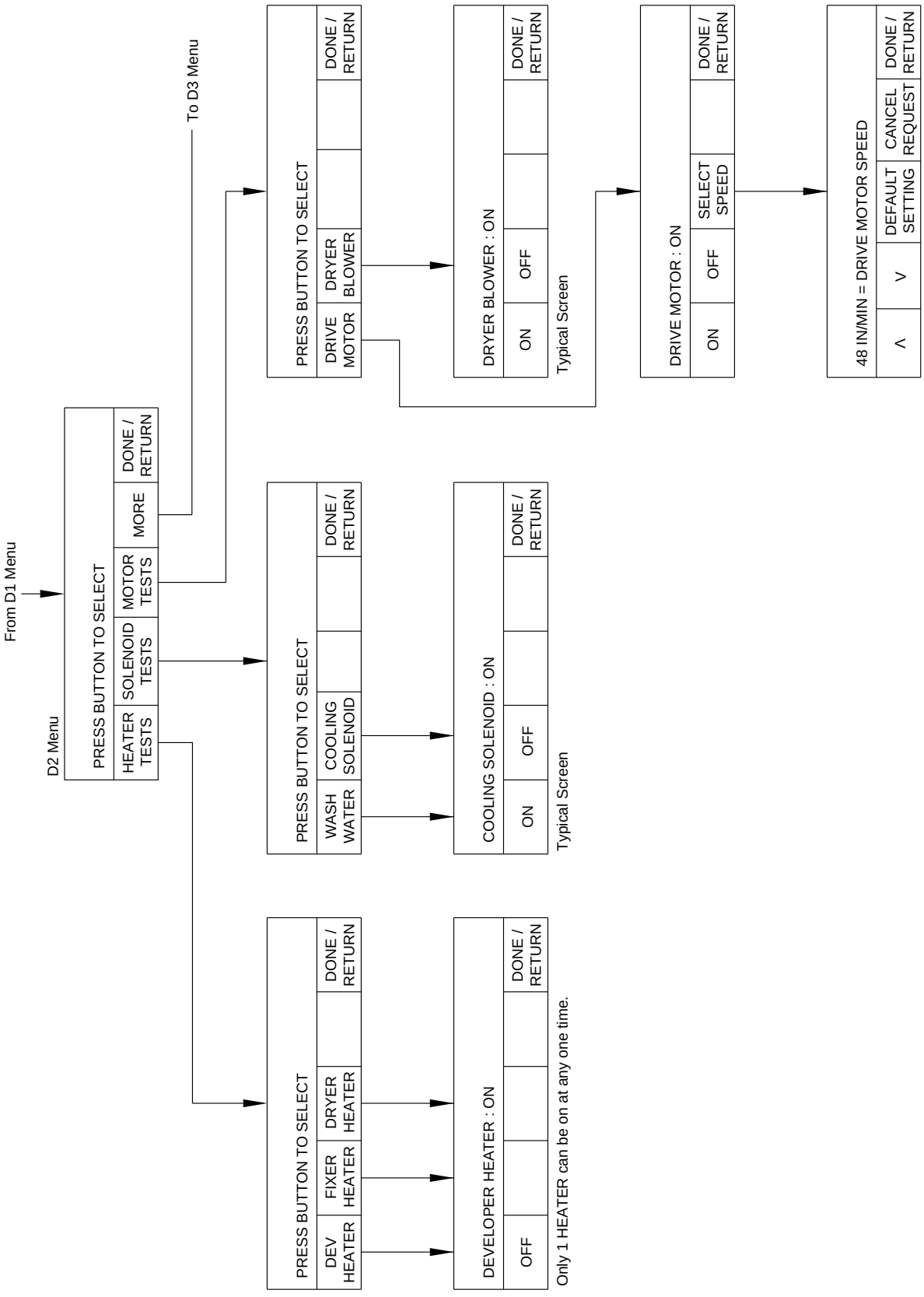
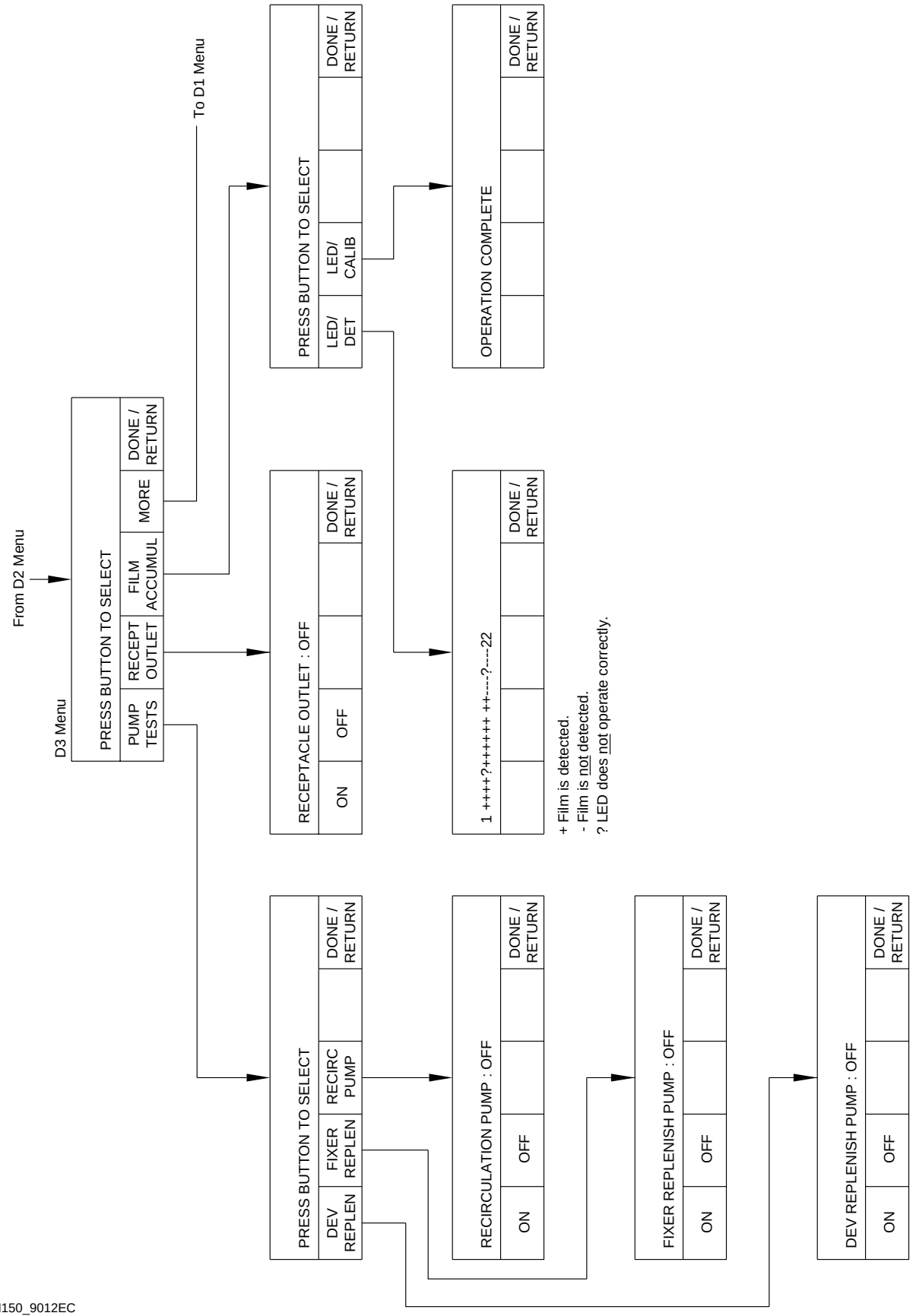

From D1 Menu
D2 Menu
PRESS BUTTON TO SELECT
HEATER TESTS
SOLENOID TESTS
MOTOR TESTS
MORE
DONE / RETURN
To D3 Menu
PRESS BUTTON TO SELECT
DEV HEATER
FIXER HEATER
DRYER HEATER
DONE / RETURN
DEVELOPER HEATER : ON
OFF
DONE / RETURN
Only 1 HEATER can be on at any one time.
PRESS BUTTON TO SELECT
WASH WATER
COOLING SOLENOID
DONE / RETURN
COOLING SOLENOID : ON
ON
OFF
DONE / RETURN
Typical Screen
PRESS BUTTON TO SELECT
DRIVE MOTOR
DRYER BLOWER
DONE / RETURN
DRYER BLOWER : ON
ON
OFF
DONE / RETURN
Typical Screen
DRIVE MOTOR : ON
ON
OFF
SELECT SPEED
DONE / RETURN
48 IN/MIN = DRIVE MOTOR SPEED
^
V
DEFAULT SETTING
CANCEL REQUEST
DONE / RETURN

H150_9013EC


From D2 Menu
D3 Menu
PRESS BUTTON TO SELECT
PUMP TESTS
RECEPT OUTLET
FILM ACCUMUL
MORE
DONE / RETURN
To D1 Menu
RECEPTACLE OUTLET : OFF
ON
OFF
DONE / RETURN
PRESS BUTTON TO SELECT
LED/ DET
LED/ CALIB
DONE / RETURN
1 ++++?++++++ ++----?----22
OPERATION COMPLETE
+ Film is detected.
- Film is not detected.
? LED does not operate correctly.
PRESS BUTTON TO SELECT
DEV REPLEN
FIXER REPLEN
RECIRC PUMP
RECIRCULATION PUMP : OFF
FIXER REPLENISH PUMP : OFF
DEV REPLENISH PUMP : OFF
H150_9012EC

Section 4: Reports

Overview

Options

The equipment software enables you to use a PRINTER to obtain copies of the following reports.

- A Status Report, which includes information about:
  - Processing Parameters
  - Options
  - Automatic Starting and Stopping Times
  - Software Versions
  - Miscellaneous Information
- A Usage Report, which includes information about the use of:
  - Film
  - Chemicals
- A Log Report, which provides information about errors in 2 formats:
  - Frequency
  - History

Requirements

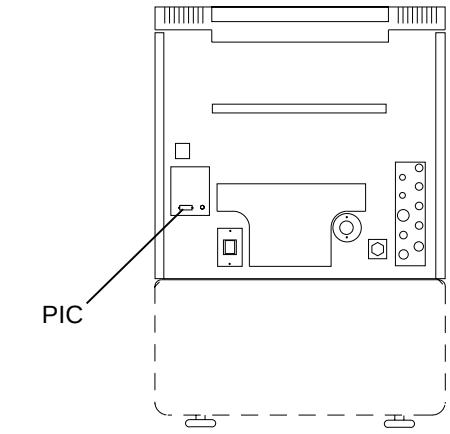
You must have the following components to print reports:

- CABLES
  - PRINTER ADAPTER CABLE TL-5004
  - INTERFACE CABLE TL-4391
- PRINTER with the following specifications:
  - 9600 baud
  - 8 data bits
  - no parity
  - serial interface

The *Kodak Diconix* 180si PRINTER meets these specifications.

Printing Reports

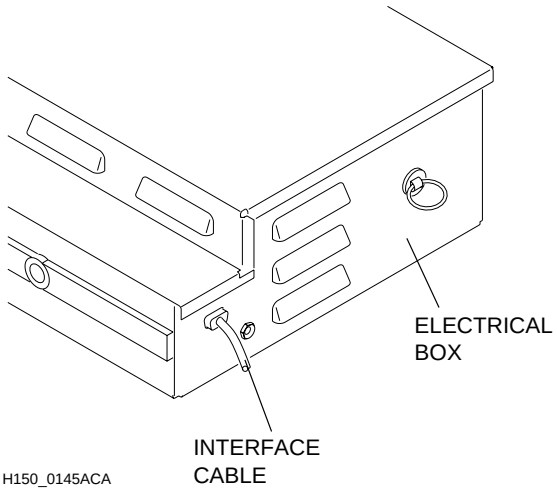
Procedure



H150_0093ACC
H150_0093AA

[1] Connect:

- the INTERFACE CABLE TL-4391 to the PIC or the ELECTRICAL BOX
- the PRINTER ADAPTER CABLE TL-5004 to the INTERFACE CABLE TL-4391 and the PRINTER.



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H150_0145AA

READY				
DRYER TEMP	SLEEP	SELECT CYCLE	MORE	**GO TO SETUP**

[2] Press “GO TO SETUP” from the main menu.

1	2	3	4	CANCEL REQUEST

[3] Enter the access code.

Ÿ	/	CYCLE	**MORE**	DONE/ RETURN

[4] Press “MORE”.

INFO	SETUP	OPTIONS		DONE/ RETURN

[5] Press “INFO”.

USAGE	**DIAG**	SW VERSION	MORE	DONE/ RETURN

[6] Press “MORE” to access the options for the printer.

PROC HOURS	PRINTER		MORE	DONE/ RETURN

[7] Press “PRINTER” to access the options for the printer.

SELECT PRINTER	PRINT REPORT	PRINT ALL		DONE/ RETURN

PRINT TO PIC	PRINT TO EBOX			DONE/ RETURN

SELECT PRINTER	PRINT REPORT	PRINT ALL		DONE/ RETURN

PRINT STATUS	PRINT USAGE	PRINT LOGS		DONE/ RETURN

[8] From this screen, you can press:

- “SELECT PRINTER” to indicate which connection you used in Step 1:
  - PROCESSOR INTERFACE CONNECTOR (PIC)
  - ELECTRICAL BOX (EBOX)
- “PRINT REPORT” to select which reports you want to print:
  - Status
  - Usage
  - Log
- “PRINT ALL” to print all the reports at once
- “DONE/RETURN” repeatedly to return to the main menu.

Publication History

Print Date	Pub. No.	ECO No.	Affected Pages	File Name	Description
OCT95	5B6333	2650-030	All Pages	dg3434_1_030.doc	1st Printing of Manual
NOV95	5B6333	2650-039	Front and Back Covers	dg3434_1_039.doc	Graphic Unification Printing
SEP98	5B6333	2650-190	All Pages	dg3434_1_30sep98.doc	Updated for patient contact per MDD regulations. This update supersedes the November 1995 printing.

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